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| 60148 7590 05/05/2009     |             |                      |                     |                  |
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| EXAMINER                  |             |                      |                     |                  |
| MARCO'ANTONI, PAUL D      |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/534,421

**Applicant(s)**

CHEN ET AL.

**Examiner**

Paul Marcantoni

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 35-70 is/are pending in the application.
- 4a) Of the above claim(s) 46-50 and 56-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 35-45, 51-55 and 60-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 35-70 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 2/13/09; 9/22/08; 6/14/07
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

The applicants' 2/6/09 response to election and 9/15/08 response to restriction is respectfully acknowledged. The applicants in their 2/6/09 response elected the species amorphous silica. The applicants also argue that they disagree with the examiner's restriction requirement. They elected the method or process claims of Group I, claims 35-45, 51-55, and 60-70 directed to a method of making a calcium silicate hydrate using a suspension agent. Applicants have requested possible rejoinder of groups of invention at a later time. However, rejoinder is only possible by electing the product claims first and followed by rejoinder of the process of making or process of using that product. The groups cannot be rejoined by electing the process first. The product must be elected first for any rejoinder of process claims. Nevertheless, there is a very simple way for applicants to recombine all groups of invention for examination by the examiner. That is, to simply state for the record that Groups I, II, and III are obvious variants. Applicants have not yet done so. The examiner also notes he has met the serious burden by presenting a proper restriction in accordance with PCT Rule 13.1 by showing that applicants process claims of Group II do not provide a special technical contribution over the prior art because the prior art cited teaches that the method of making calcium silicate hydrate is old and conventional in the art. Applicants have not traversed the merits of this rejection in accordance with PCT Rule 13.1 and the examiner maintains it is proper. Again, should applicants wish all Groups of invention to be examined together, please state that all groups of invention are obvious variants in your next response. The restriction requirement is thus FINAL.

Moving on to the rejection of the elected Group I (method) claims, the following rejections were made:

Obviousness Type Double Patenting:

Claims 35-45, 51-55, and 60-70 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-34 of U.S. Patent No. 6,506,248 B1 (Duselis et al.) and claims 1-33 and 65 and 71-78 of US Patent No. 6,346,146 B1 (Duselis et al.) Both references method claims teach applicants' claimed invention. Although the conflicting claims are not identical, they are not patentably distinct from each other because both teach a method for making calcium silicate hydrate by mixing a calcerous source and a siliceous source under the appropriate conditions and do not rule out not mixing (physically agitating) but just adding the components together.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

35 USC 112 Second Paragraph:

Claims 35-45, 51-55, and 60-70 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention.

The term "predetermined" is indefinite in claim 35.

The term "little" agitation is not clear and vague. What does this mean? Is it light mixing or gentle mixing and for how long if at all?

The term "essentially homogeneous" would appear indefinite in claims 45 and 54 and 70 would appear indefinite. How is this different than a homogeneous mixture? Consideration of deletion of "essentially" can be made to resolve this issue.

Claim 51 is indefinite with respect to the terms "predetermined temperature/pressure profile".

The terms "*adapted to form a gel*" is indefinite in claims 40 and 65 and any other claim it is used. Delete adapted so the claim reads --gel forming agent forms a gel--. Delete "adapted" in all instances and claims it is used. It is not proper.

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35 USC 103:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 35-45, 51-55, and 60-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams '746, Huttemann et al. '971, Binkley '097, Kalousek '657, Helser '955 or '397, Nakano et al. '573, Kubo '324, Oguri et al. '257, Stellmach (DE 3641823 abstract), JP 59045953 abstract, or Takahashi et al. (JP 2004051379 abstract), WO 01/14274 (*Mathur*), WO 98/45222 (*James Hardie*), EP 78119 (*Horton*), GB 99702 A (*Johns Manville*), *Derwent Abstract* 89-161597/22, JP 11079729 A (*Chichibu Onoda Cement*), or *Lecture* (US 5,709,743).

Note: The italicized references were also provided in the rejection only because they were cited as X references by the Australian Patent Examiner in the International PCT Search Report. The reasons for the rejection of claims are the same as the ones he also provided in the international search report writeup and rejection of claims.

All of the above cited references teach making calcium silicate hydrate by mixing a calcereous material with a siliceous material in a quantity. The prior art does not teach a predetermined quantity so thus the rejection under 35 USC 103 was made over 35 USC 102. It was not understood what applicants meant by

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predetermined quantity. Further, the crux of applicants invention appears to be that the formation reaction of calcium silicate hydrate between the calcerous source and the siliceous source takes place with *little* or no agitation (see claim 35). More particularly, it seems "no agitation" as indicated in independent claims 51 and 60. The term "little agitation" is not completely understood either as applicants do not define what constitutes "little agitation". It would appear that applicants mean lightly or gently mixing but it is not clear (as opposed to vigorously stirring or agitating).

Williams et al. '746 teach making calcium silicate hydrate by mixing lime and diatomaceous earth (claim 1 in col.4) and includes gently mixing the calcerous and siliceous components which thus reads upon at least "little agitation" in col.3, line 54. Further, Williams does not rule out mixing or adding the two components without gentle agitation. It would have been understood by one of ordinary art that physically mixing or agitating only assists the reaction but nowhere does Williams rule out simply mixing without a stirring or agitation mechanism.

Hutteman '971 teaches mixing a calcerous and siliceous source to make calcium silicate hydrate (see claims) and does not even mention that these components must be agitated in any way but only physically be added together or mixed with one another (not necessarily with a mixing device). Also note that, for example, mixing will occur even upon transport in a tube or pipe or even in a container just by the turbulent action of the two ingredients together.

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Binkley also teaches making calcium silicate hydrate by mixing a calcerous and siliceous source but also notes that it is often desirable to subject the slurry to "mild" agitation (col.3, line 83). Nowhere does Binkley say the pre-reaction "must" be agitated. One of ordinary skill in the art would have understood it would have been an obvious for one of ordinary skill in the art to agitate or not do so.

Kalousek '657 teaches making a calcium silicate hydrate by mixing a calcerous and siliceous source in Example I and notes that the mixture can undergo "mild" (ie little) mixing or may be hand mixed by using a wooden paddle. Note again that Kalousek does not say it "must" be hand mixed gently or mildly but that it may be mixed in this manner. It would have been also obvious for one of ordinary skill in the art to simply not mix with a wooden paddle at all and just let the mixture form the gel without mixing (see Example I, col.3, lines 1-20).

Helser teaches making a calcium silicate hydrate by mixing a calcerous source and a siliceous source and he does not require any agitation of the two components prior to forming the gel thus meeting applicants' claim limitations (See claims for both Helser references).

Nakano et al. likewise teaches mixing the same components but not agitating to form the gel which becomes calcium silicate hydrate (see claims).

Kubo '324 also teaches making hydrous calcium silicate hydrate by mixing a calcerous and siliceous source and notes that "although the continuous stirring is desirable, the system may be stirred intermittently insofar as the production of the hardened mass is prevented. It would appear Kubo is saying that stirring is



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not required to form the end product thus meeting applicants limitation (negative) of little or no agitation (ie stirring).

Oguri et al. '257 teach a process for making calcium silicate hydrate by mixing a calcerous source and a siliceous source and in his claims he does not require agitation of the components but only that they be added together for a reaction (see claims).

Stellmach (DE 3641823 abstract) teaches making calcium silicate hydrate by mixing the calcerous/siliceous reactants in aqueous solution and "allowing them to stand undisturbed" until the end of gel formation. If this mixture is allowed to stand undisturbed, than certainly there is no agitation as this would cause a disturbance to the mixture of components in aqueous solution (See abstract).

JP 59045953 (Asahi) teaches making calcium silicate hydrate gel is formed by mixing diatomaceous earth (siliceous source), calcium hydroxide (calcerous source) and water and though they teach they were mixed together "mixing" in this sense only means "added together". Nowhere is it stated that agitation of the mixture of these components occurs.

JP 20004051379 (Takahashi et al.) teach making calcium silicate hydrate of at least 50 wt% solids and also does not teach physically mixing or agitating the calcerous and siliceous components to form the gel.

Again, with reference to the PCT examiner's international search report and references, please refer to this examiner's rejection of claims and this examiner has adopted the Australian examiner's rejection of claims as well.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Marcantoni whose telephone number is 571-272-1373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Paul Marcantoni/  
Primary Examiner, Art Unit 1793